

2 CONNECTING THE PIPING

CAUTION

The maximum lengths of this product are shown in Table 2 in outdoor unit's installation inspection sheet. If the units are further apart than this, correct operation can not be guaranteed.

1. FLARING

- Cut the connection pipe to the necessary length with a pipe cutter.
- Hold the pipe downward so that cuttings will not enter the pipe and remove the burrs.
- Insert the flare nut (always use the flare nut attached to the indoor and outdoor units respectively) onto the pipe and perform the flare processing with a flare tool.

Use the special R410A flare tool, or the conventional flare tool.

Fig. 24

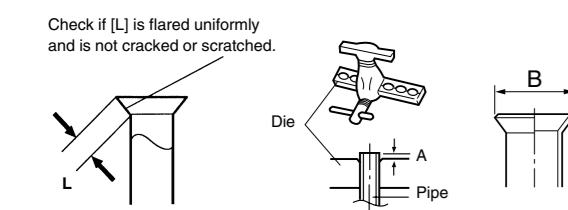


Table 4 Flaring dimension: B

Pipe outside diameter	B (mm)
6.35 mm (1/4 in.)	9.1
9.52 mm (3/8 in.)	13.2
12.7 mm (1/2 in.)	16.6
15.88 mm (5/8 in.)	19.7

When using conventional flare tools to flare R410A pipes, the dimension A should be approximately 0.5 mm more than indicated in Table 5 (for flaring with R410A flare tools) to achieve the specified flaring. Use a thickness gauge to measure the dimension A.

Table 5 Pipe outside diameter

Pipe outside diameter	A (mm)
6.35 mm (1/4 in.)	0 to 0.5
9.52 mm (3/8 in.)	0 to 0.5
12.7 mm (1/2 in.)	0 to 0.5
15.88 mm (5/8 in.)	0 to 0.5

2. BENDING

- When bending the pipe, be careful not to crush it.
- To prevent breaking of the pipe, avoid sharp bends. Bend the pipe with a radius of curvature of 70 mm or over.
- If the copper pipe is bent or pulled to often, it will become stiff. Do not bend the pipe more than three times at one place.

3. CONNECTION

- Install the outdoor unit wall cap (supplied with the optional installation set or procured at the site) to the wall pipe.
- Connect the outdoor unit and indoor unit piping.
- After matching the center of the flare surface and tightening the nut hand tight, tighten the nut to the specified tightening torque with a torque wrench. (Tighten the flare nut of the outdoor unit 3-way valve after air purging.)

Fig. 25

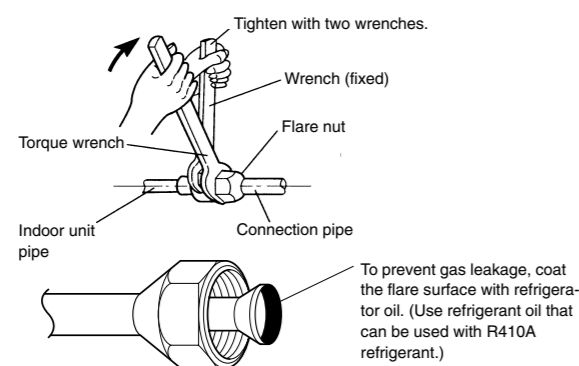


Table 6 Flare nut tightening torque

Flare nut	Tightening torque
6.35 mm dia.	14 to 18 N·m (140 to 180 kgf·cm)
9.52 mm dia.	33 to 42 N·m (330 to 420 kgf·cm)
12.7 mm dia.	50 to 62 N·m (500 to 620 kgf·cm)
15.88 mm dia.	63 to 77 N·m (630 to 770 kgf·cm)

Do not remove the cap from the connection pipe before connecting the pipe.

3 ELECTRICAL WIRING

WARNING

- Before starting work, check that power is not being supplied to indoor unit and the outdoor unit.
- Match the terminal block numbers and connection cord colors of the indoor unit and the outdoor unit. **Erroneous wiring may cause burning of the electric parts.**
- Connect the connection cords firmly to the terminal block. **Imperfect installation may cause a fire.**
- Always fasten the outside covering of the connection cord with the cord clamp. **(If the insulator is chafed, electric leakage may occur.)**
- Always connect the ground wire.

HOW TO CONNECT WIRING TO THE TERMINALS

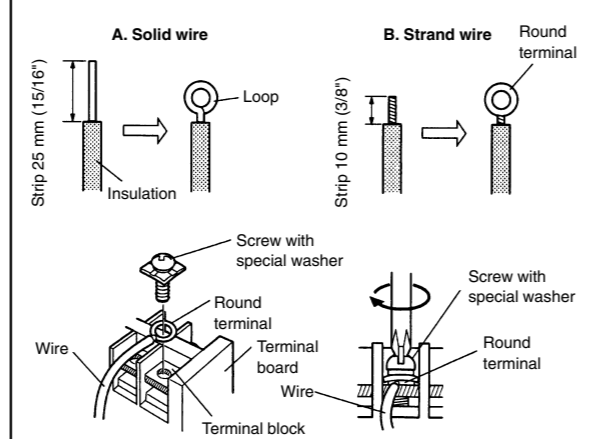
A. For solid core wiring (or F-cable)

- Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 25 mm (1 5/16") to expose the solid wire.
- Using a screwdriver, remove the terminal screw(s) on the terminal board.
- Using pliers, bend the solid wire to form a loop suitable for the terminal screw.
- Shape the loop wire properly, place it on the terminal board and tighten securely with the terminal screw using a screwdriver.

B. For strand wiring

- Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 10 mm (3/8") to expose the strand wiring.
- Using a screwdriver, remove the terminal screw(s) on the terminal board.
- Using a round terminal fastener or pliers, securely clamp a round terminal to each stripped wire end.
- Position the round terminal wire, and replace and tighten the terminal screw using a screwdriver.

Fig. 26



- Open the intake grille. Remove the tapping screw for the control box cover and remove the control box cover. (Fig. 27)
- Remove the tapping screw and while minding the cord holder hook, remove the cord holder. (Fig. 28)
- Connect the end of the connection cord fully into the terminal block. (Fig. 29)

Fig. 27

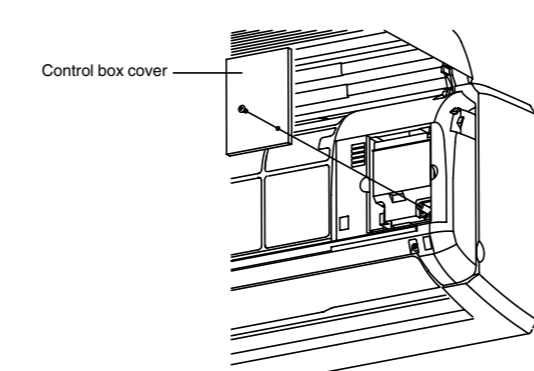


Fig. 28

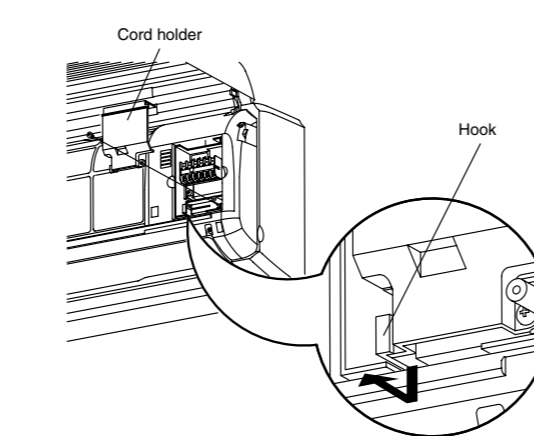
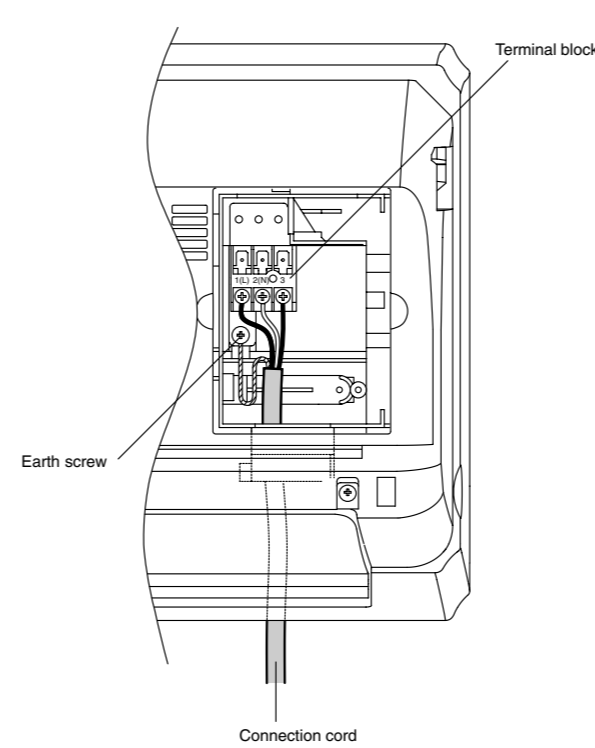


Fig. 29

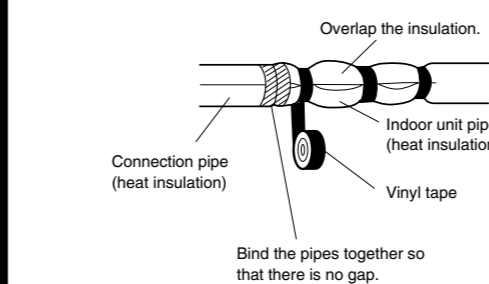


4 FINISHING

1. CONNECTION PIPE, CORD AND DRAIN HOSE

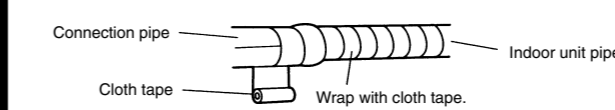
- Insulate between pipes.
 - For Rear, Right, and Bottom piping, overlap the connection pipe heat insulation and indoor unit pipe heat insulation and bind them with vinyl tape so that there is no gap. (Fig. 30)
 - For Left rear and Left piping, butt the connection pipe heat insulation and indoor unit pipe heat insulation together and bind them with vinyl tape so that there is no gap. (Fig. 31)

Fig. 30 (Rear, Right, and Bottom piping)



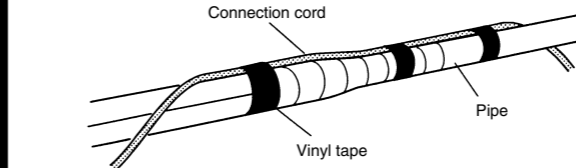
- For Left rear piping, Left piping and Center piping, wrap the area which accommodates the rear piping housing section with cloth tape.

Fig. 31 (Left rear piping, Left piping and Center piping)



- For Left rear piping, Left piping and Center piping bind the connection cord to the top of the pipe with vinyl tape.

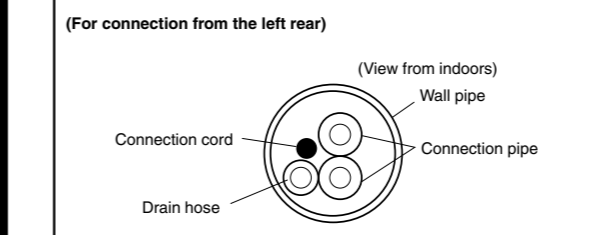
Fig. 32



Check that:

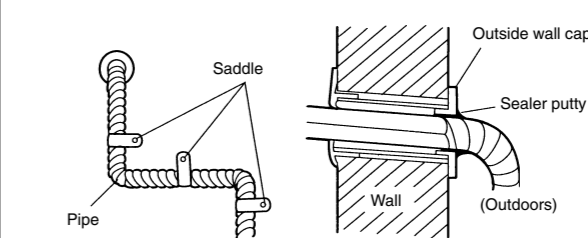
- When connected from the left rear, the drain hose is at the bottom left of the wall pipe.

Fig. 33



- Temporarily fasten the connection cord along the connection pipe with vinyl tape. (Wrap to about 1/3 the width of the tape from the bottom of the pipe so that water does not enter.)
- Fasten the connection pipe to the outside wall with a saddle, etc.
- Fill the gap between the outside wall pipe hole and the pipe with sealer so that rain water and wind cannot blow in.

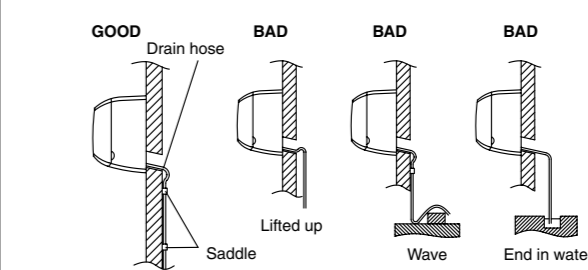
Fig. 34



- Fasten the drain hose to the outside wall, etc.

Fig. 35

Check the following:



2. INSTALLING FINAL PARTS

- Secure the cord holder with tapping screw. (Fig. 34)
- Secure the control box cover and tapping screw. (Fig. 36)
- Close the intake grille. (Fig. 37)

Fig. 36 (Rear piping)

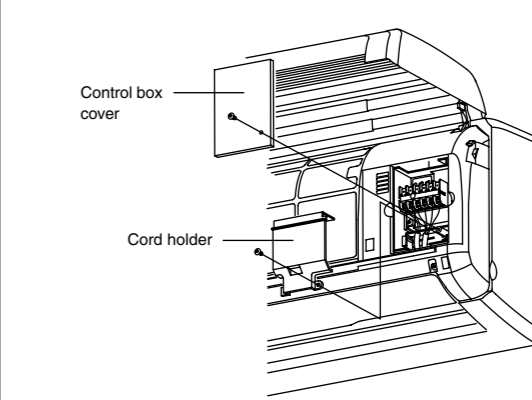
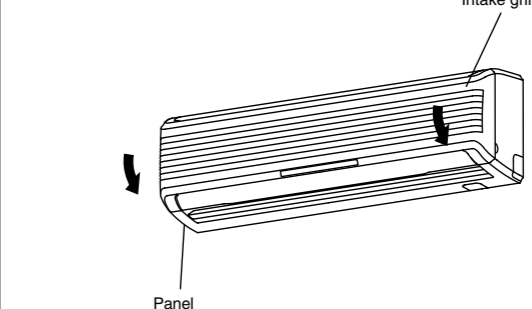


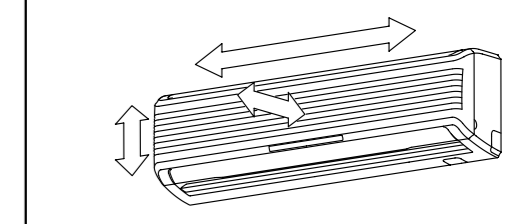
Fig. 37



Check that:

- The top and bottom hooks are hooked firmly and the indoor unit does not move to the front and rear or left and right.
- The indoor unit is accurately positioned horizontally and vertically.

Fig. 38



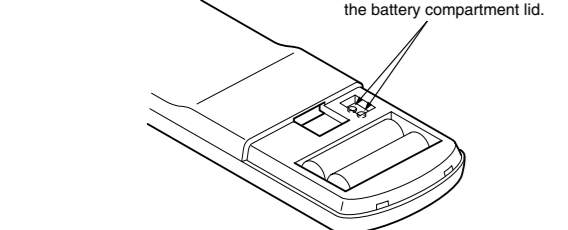
5 TEST RUNNING

CAUTION

Always turn on the power 4 hours prior to the start of the operation in order to ensure compressor protection.

- Perform test operation and check items 1 and 2 below.
- For the operation method, refer to the operating manual.
- The outdoor unit may not run, depending on the room temperature. In this case, the 'TEST RUN' signal is received during air conditioner operation (use a metallic object to short the two metal contacts under the battery compartment lid and send the 'TEST RUN' signal from the remote control unit).

Fig. 39



Operation can be checked by lighting and flashing of the display section OPERATION and TIMER lamps. Perform judgement in accordance with the following.

- Test running
 - When the air conditioner is run by pressing the remote control unit test run button, the OPERATION and TIMER lamps flash slowly at the same time.
- Error
 - The OPERATION, TIMER and SWING lamps operate as follows (Table 7) according to the error contents.

Table 7

Error contents	Error display		
	OPERATION (RED)	TIMER (GREEN)	SWING (ORANGE)
Outdoor unit piping sensor error	○	● 3 times	—
Outdoor unit outdoor temperature sensor error	○	● 4 times	—
Outdoor unit discharge temperature sensor error	○	● 5 times	—
Outdoor pressure switch error	○	● 9 times	—
Outdoor unit IPM error	○	● 10 times	—
Outdoor unit fan motor error	○	● 14 times	—
Outdoor unit 2-way valve sensor error	○	—	● 2 times
Outdoor unit 3-way valve sensor error	○	—	● 3 times
Connecting indoor unit information error	○	—	● 4 times
Outdoor unit circuit board error	○	—	● 5 times
Indoor unit room temperature sensor error	● 2 times	○	—
Indoor unit piping sensor error	● 3 times	○	—
Outdoor unit circuit board error or miss wiring between outdoor unit and indoor unit	● 5 times	○	—
Indoor unit fan motor error	● 6 times	○	—

○ : Fast flashing ● : Slow flashing — : Off

CHECK ITEMS

- Is operation of each button on the remote control unit normal?
 - Does each lamp light normally?
 - Do not air flow direction louvers operate normally?
 - Is the drain normal?
 - Is there any abnormal noise and vibration during operation?
- Do not operate the air conditioner in the test running state for a long time.
 - For the operation method, refer to the operating manual and perform operation check.

6 REMOTE CONTROL UNIT INSTALLATION

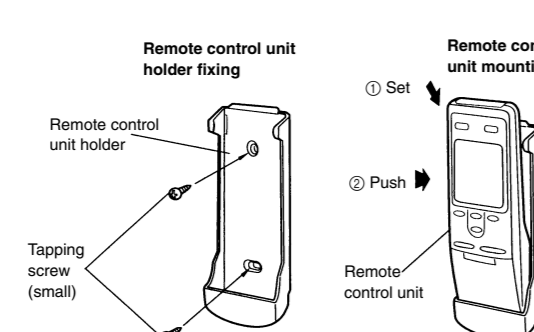
CAUTION

- Check that the indoor unit correctly receives the signal from the remote control unit, then install the remote control unit holder.
- Select the remote control unit holder selection site by paying careful attention to the following:
 - Avoid places in direct sunlight.
 - Select a place that will not be affected by the heat from a stove, etc.

1. REMOTE CONTROL UNIT HOLDER INSTALLATION

- Install the remote control unit with a distance of 7 m between the remote control unit and the photocell as the criteria. However, when installing the remote control unit, check that it operates positively.
- Install the remote control unit holder to a wall, pillar, etc. with the tapping screw (Fig. 40).

Fig. 40



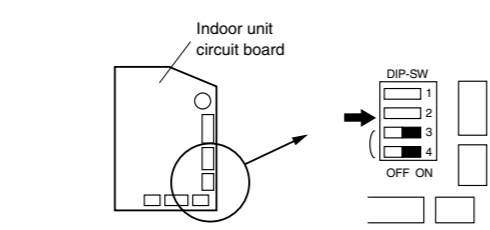
2. SWITCHING REMOTE CONTROL UNIT SIGNAL CODES

- Air conditioner settings
 - Confirm the setting of the remote control unit signal code and the printed circuit board setting. If these are not confirmed, the remote control unit cannot be used to operate for the air conditioner.

Table 8

DIP-SW		Remote control unit signal code
DIP-SW3	DIP-SW4	
ON	ON	A (Primary setting)
OFF	ON	B
ON	OFF	C
OFF	OFF	D

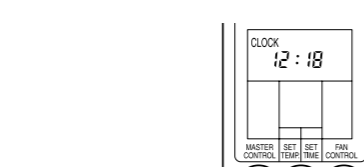
Fig. 41



Remote control unit settings

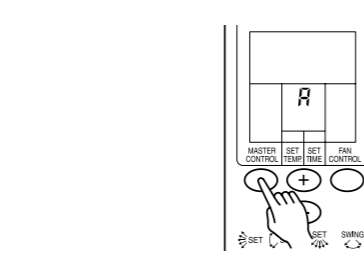
- Press the START/STOP button and display only the clock.

Fig. 42



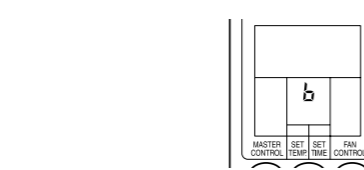
- Press the MASTER CONTROL button continuously for more than five seconds to display the current signal code.

Fig. 43



- Change the signal code with the < > button (R-b-c-d).

Fig. 44



- Press the MASTER CONTROL button again to return to the clock display and change the signal code.

7 CUSTOMER GUIDANCE

Explain the following to the customer in accordance with the operating manual:

- Starting and stopping method, operation switching, temperature adjustment, timer, air flow switching, and other remote control unit operations.
- Air filter removal and cleaning, and how to use the air louvers.
- Give the operating manual and installation instruction sheet to the customer.